# A Program in The Medical Sciences

by Alan Gregg

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# THE PROGRAM IN THE MEDICAL SCIENCES

A Statement by Alan Gregg

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A program, especially if it involve policy consideration, can be presented in two parts: the first section being devoted to the arrangement and presentation of its component items, the second section being devoted to general comments or interpretations of the program as a whole. This procedure will be followed in outlining the present program of the Medical Sciences. Under Section I are set forth, not any individual projects, but the principal areas of Medical Sciences activity - the word "activity" comprising the officers' reading, interviews, visits, reports, and negotiations involved in making recommendations, extensions, renewals, and other types of administrative work.

For list of main Program headings, see page 6 following

## I

Psychiatry and Neurology. Emphasis on these subjects began in 1933. Seventeen years might be assumed to be enough time to put any field in medicine on a reformed and solid foundation. Four of the past 17 years were depression years, five to six were years of war, and the last five have witnessed a progressive loss in the dollar's purchasing value. The program in behalf of psychiatry can reasonably claim special consideration because of these handicaps. Consequently, there is no clear case for giving up completely or hurriedly our present interest in psychiatry and neurology and their underlying sciences such as neurophysiology, neuropathology, and psychology. Indeed, if the Foundation were to announce that it was no longer interested in psychiatry, such a declaration would be interpreted very widely as evidence of the Foundation's disillusionment with the possibility of progress in this field.

Much still needs to be done in the study of psychotherapy and the criteria of successful therapy, in the development of psychiatry in other countries, in the support of psychology both in North America and in Europe, and in the support of basic studies in histology, biochemistry, biophysics, physiology, pathology and genetics of the nervous system. Opportunities in these fields will continue to be given careful attention and support.

It does not seem reasonable, however, for the Foundation to undertake any new projects involving general support to departments of psychiatry in North American medical schools, nor to continue for more than a minimum period existing projects of this kind. Local or federal government aid must shoulder such costs eventually now that psychiatry is fairly well taught in some schools.

Preventive Medicine and Public Health. In most countries preventive medicine and public health depend upon the level of general education, on the quality of medical education and on political and economic factors. With the last two factors the Foundation can have little to do. But any improvement in the teaching of preventive medicine and public health to the doctors of the future is likely to improve the status of the public health and the advance of preventive medicine. The officers of the International Health Division stationed in other countries usually agree that any favorable long-term predictions one could make about the public health in any country call for improvements in its medical education, including especially the teaching of public health to medical students.

When all our medical schools are full and over-applied for, the graduate Schools of Public Health are still far from full. Obviously something is wrong. The public seems to hold an ignorant underestimate of the value of public health officers. In any case, not many of the ablest medical students head for public health.

Meanwhile the service of the doctor to our society seems to be changing. Group practice becomes more common. Prepayment schemes for physicians' services are growing. The need for medical care is beginning to be considered a desirable basis for organizing the practice of the future. This will call for extensive revision of our teaching of public health and preventive medicine in medical schools here and in other countries. Activity in this teaching will be one of the fields of interest to the Medical Sciences. The graduate Schools of Public Health remain within the field of the International Health Division as they have been in the past.

Endocrinology. News can be spread through town over telephone wires or by persons circulating from house to house. Similarly in the body, different organs can be reached by messages coming over the nervous system, or they can be reached by substances that profoundly affect the growth and function of different tissues such as skin, hair, cartilage, muscle, etc. Most readers are familiar with the names of such internal secretions as insulin and adrenalin, and with the fact that the pituitary, the thyroid, the adrenals (and other endocrine glands) produce internal secretions that are small in amount but large in effects and complicated in both structure and action.

So complicated is the subject of endocrinology that the Medical Sciences has chosen to give long-continued support to a few investigators possessing an unusual blend of chemical knowledge, tenacity of purpose,

enthusiasm and critical judgment. The recent discoveries of the physiological effects of ACTH and cortisone (both substances related to the internal secretion of the cortex or rind of the adrenals) have called for and secured research grants from government in amounts far larger than the Medical Sciences could have supplied. Now that ACTH and cortisone have reached clinical use and commercial production, our best policy will be to find a few interested and competent physiologists and clinicians and support them.

Human Heredity. Beginning in 1932 with grants for the studies of human identical twins, the Medical Sciences has kept a steady interest in what is sometimes called medical genetics. Progress is necessarily slow in this field. Hereditary traits show best where there is close inbreeding. The number of closely inbred populations is diminishing. Such populations are always isolated and hard to get to. Inherited defects of structure and function are popularly interpreted in most parts of the world as evidence of divine punishment or displeasure, and therefore are hidden or lied about. Experimental genetics is growing rapidly in the hands of biologists working with plants and insects. Human matings are not controllable in any way comparable to the geneticist's experimental crosses, and no one student of human heredity would be likely to live long enough to be able to study as many as four generations of human subjects.

Despite these numerous and heavy limitations, progress can be made. Certainly compared with what we now see that heredity determines in plants and animals, we have given environment more than its due share of attention in our studies of man. Man's nature has been ignored, his nurture receiving most of the scientists' attention. Psychiatry and psychology could both gain from and give to the intensive study of human heredity.

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The real meaning of some population problems varies more with the kind of people produced than with the number merely. No really adequate study of population growth could neglect the factor of human heredity, even though at present our knowledge of the laws and nature of human heredity is scant, to say the least. The main contributions the Medical Sciences division can make to the study of population problems will be through the National Research Council Committee on Research in Problems of Sex, through studies of the physiology of human reproduction, and through studies of human heredity.

Medical Education. There is considerable evidence that the foundations, the science writers, various successful researches during the war (notably the Manhattan project), and the change in disease rates and consequent increase in longevity that characterize the last 50 years, have all had a share in making the American public aware of the immense value of scientific research. Not only aware of the value of research but in medicine insistently pushing the federal government to support research over a wide range. Scholarships and fellowships to recruit the ranks of researchers, grants in aid of research, buildings to house research - all these are available from Government in numbers undreamed of 30 years ago. It should be added that a well-known leader at California Institute of Technology recently expressed himself in private as being willing to trade

nine dollars of government research grant money for one dollar of Rockefeller Foundation research grant money because the latter was so much more wisely planned and given. None the less, the Government has large - at present, very large - resources for supporting research work. With the creation of a National Science Foundation, the furtherance of medical research is no longer so largely the privilege of universities and foundations.

Meanwhile the medical schools, especially those in our endowed universities, have begun to deteriorate. Their effective income is about half what it was in 1930. In the thirties the average drop in endowment income rate was from 5% to 3.5% - about a 30% loss in endowment income. Then came the loss of teachers and the interruption of training and recruitment of teachers during the war. Then came the loss in the purchasing power of the dollar and consequently the loss of young teachers who would not live on niggardly salaries when the practice of medicine paid very well. The financial straits of our medical schools threaten the recruitment and training of research men in biological science as well as medicine.

Nor is the present difficulty merely financial. The medical school authorities are not prepared - in most instances - to decide, and persuade their colleagues to accept, the changes in objective and in method which are appropriate to the teaching of medicine in 1950. They think the entire difficulty is merely financial.

Obviously neither the division of Medical Sciences nor even all the Foundation's income could make much impression on the financial need of 78 schools. This need is estimated at $15,000,000 annually just to keep them efficient as judged by the standards of a decade ago. Nor would there be much interest or any justification for a foundation simply supplying funds to carry or salvage medical schools to perpetuate teaching methods they have been using since 1929 with gradually decreasing effectiveness.

It may not be unreasonable to suggest that the senior officer of the division of Medical Sciences during the five years remaining to him in the service of The Rockefeller Foundation has more to offer out of thirty years of contact with public health field work, research institutes, hospitals and medical schools as a critic and adviser of medical education than in any other capacity. Were his own judgment to be asked as to the major need of the medical sciences today, the reply would suggest a series of three or four monographs on the purposes and methods, the problems and the circumstances, the present and the future of research, teaching and medical practice and the preparation for them, written by a person, not by a committee, and without any more to commend it than its own quality.

One more point under the general heading of medical education. The division has paid for the pioneering expenses in other fields than psychiatry and neurology. The Department of the History of Medicine at Johns Hopkins, the Chair of Clinical Science at University College, London, the Department of Legal Medicine at Harvard and the Departments of Dermatology at Harvard and at Pennsylvania are examples. It might be

that some other subject, e.g., human reproduction, or human ecology, might be aided in the future as a qualitative addition to medical education.

Miscellaneous. The classification "miscellaneous" is necessary because occasionally a request demands favorable action because it is the inescapable result of some project begun by the Foundation and morally its responsibility. Since the Foundation's interests have been both numerous and varied in the general field of medicine, a good many apparently incongruous items appear and will continue to appear under "miscellaneous."

On more than one occasion the rubric "miscellaneous" has contained growing edges or budding points of the division's interest. Such, for example, was the first project in the field of the distribution of medical care. It would be irony to insist that any division concerned with research be expected to delimit or define the extent of its interest in events still unfolding. So into "miscellaneous" sometimes fall projects of unimagined characteristics and unforeseen excellence.

Finally, there are a few types of activity that could better be called "general" than "miscellaneous" since they usually contribute to the other programs even though having an individual raison d'etre. The fellowship program exemplifies such a general program. Since the mere size and duration of the fellowship program invite challenge to our continuing it, it might be appropriate to note that our satisfactory contacts in every country including our own are due more to the fellowship program than to any other activity.

And so, as above noted, the program of the Medical Sciences division is spread over six main headings:

1. Psychiatry (including neuroanatomy, neurophysiology, neurochemistry, clinical neurology, neurosurgery, psychology, clinical psychology, child guidance, etc.)

2. Public Health and Preventive Medicine (as presented to medical students)

3. Endocrinology (with possible later relationships to constitution and character and certain present bearing on large areas of physiology)

4. Human Heredity (genetics as applied to human individuals and populations)

5. Medical Education (the training of future practitioners, teachers and investigators in the medical sciences and the clinical subjects)

6. Miscellaneous (general programs such as fellowships. New and exploratory items. Occasional moral responsibilities from earlier projects.)

II

The first comment on the program of the Medical Sciences as outlined above is that the Federal Government now has funds for training and research work in the medical sciences and clinical medicine in amounts and for purposes not available (nor even imagined) before World War II. A bill for direct aid to medical education is now in Congress. There will be discussion of the so-called National Science Foundation, with possible legislative action in the next year. It would probably be no exaggeration to say that the existent enormous changes in tax-supported maintenance of research and training justify a thorough review of the policy of the Medical Sciences.

The Federal Government, like the private foundations, spends most of its money in the medical field in the form of grants for training personnel and in short-term research grants. In the main it is now true of both Federal funds and Rockefeller Foundation funds that buildings and endowment are given with reluctance to universities if they are given at all; and that preference is given to grants in aid and fellowships, usually on relatively short-term commitments. In effect the policies of the Foundation have been imitated by agencies of the Federal Government (United States Public Health Service, Veterans Administration and Atomic Energy Commission). In quantitative terms the Federal Government completely outstrips the resources and the activities of The Rockefeller Foundation in medicine. Only by doing what the Federal authorities can't do - e.g., long-term grants or endowments or special experiments in "new" fields - can the Foundation avoid quantitative comparisons with a now far more powerful competitor. I would think that in the Medical Sciences it would be wise to keep a close control of small and short-term grants, and therefore not increase our staff but favor long-term grants and endowment.

The fact is that the present level of government spending in research and the likelihood of a National Science Foundation being created in the near future call for a re-examination of our policy and especially the attitude toward endowment. Endowment now becomes the one type of valuable aid which the Government cannot give. Furthermore, endowment gives an institution independence of government: indeed, it could be claimed that adequate endowment of a private institution not only makes it independent of government - it makes government dependent on the private institution's dependable resources. Refusal to endow when maintenance grants from government are hunting for places stable enough to accept government help would continue an old policy in changed circumstances. The argument that endowment means but little nowadays brings to mind the source of the Foundation's current income.

The above comment obviously concerns principally the activities of the Medical Sciences in the United States. In point of Medical Sciences interests in other countries (especially in medical education), the situation is somewhat unusual.

If the foundation that leads all other American organizations in its reputation for tactful and helpful relations with both the people and the officials of other nations were to choose this time to withdraw its representatives from abroad, it would add a strange flavor to the expectations in various countries of American collaboration at technical rather than political levels. Such a decision would be incomprehensible abroad. On the other hand, it would give Medical Sciences officers satisfaction if, in the interests of medical education, the Medical Sciences can place two or three representatives abroad for periods of three to five years, or be of further assistance to International Health Division representatives already resident in foreign countries. It would, however, be mistaken to embark upon the support of program in medical education on an international basis unless the Trustees have convictions that would be likely to outlast the remaining period of service of the present director. The Foundation needs no repetition of the disappointment and discouragement in South Africa, South America and the Far East on the termination in 1929 of the Foundation's interest in medical education.